

ABSTRACT OF THE DISCLOSURE

In a sensor: a thin film is formed on a face of the dielectric block and in contact with a specimen; a semiconductor laser unit as a light source emits a light beam; an optical system injects the light beam into the dielectric block so that the light beam is incident on a boundary between the dielectric block and the thin film at a plurality of incident angles which are greater than a critical angle for total reflection; and a light detecting unit detects a state of attenuated total reflection by measuring the intensity of the light beam totally reflected from the boundary. The semiconductor laser unit is driven with a driving current on which a high frequency component is superimposed.